

VIII.—TWO NEW CICADAS FROM SARAWAK, WITH A NOTE ON
THE BORNEAN SPECIES OF THE GENUS, *COSMOPSALTRIA*,
STAL.—BY J. C. MOULTON, CURATOR OF THE SARAWAK
MUSEUM.

Having just completed and published a list of all known Bornean *Cicadidae**, it was perhaps only natural to expect that more material would immediately come in, just to show how incomplete this list really was.

And so it happened that two large collections of these Homoptera were sent to the Museum recently—the results of light-house collecting at Baram Point and Kedurong Point, Sarawak.

Among them were two new species, descriptions of which are appended. The second of this is an interesting form connecting two already known species of the difficult genus, *Cosmopsaltria*, Stal. I have endeavoured to show the relationship between the Bornean species of this genus, and, with the aid of a synoptical table, the differences by which they may be easily distinguished.

GENUS, *Platylomia*, Stal.

Platylomia distanti, sp. n.

Male. Very near *P. spinosa*, Fab., but differing from that species in the opercula which reach the posterior margin of the third abdominal segment, while in *spinosa* they nearly reach the fifth abdominal segment. The apices of the opercula in this species are evenly rounded inwardly and outwardly. Tegmina hyaline, differing from *spinosa* in having no infuscations at base of third, fifth and seventh apical areas.

Length, excl. tegm. 51 mm.; exp. tegm. 126 mm.

Type. *Male*. Kuching, Sarawak (Sar. Mus.).

Mr. Distant kindly examined this specimen, reporting it as unknown to him and near *P. spinosa*. I have much pleasure in dedicating it to him. The female is unknown.

* *Journal of the Straits Branch, Royal Asiatic Society*, No. 57, pp. 123—156 (1911). In that paper 71 species are recorded from Borneo. But Mr. Distant has since informed me that the species identified as *P. umbrata*, Dist. is really *P. spinosa*, Fab., so *P. umbrata* should not be included in the Bornean list. With the two species described in this paper, the total number now therefore reaches 72.

Three other specimens have been received from Kedurong which are still nearer *P. spinosa* in having slight infuscations at base of third, fifth and seventh apical areas as in that species. But by the shape and size of the opercula they must be referred to *P. distanti*.

GENUS, *Cosmopsaltria*, Stal.

The following species are known from Borneo.

1.—*Cosmopsaltria jacoona*, Distant.

Ann. Mag. Nat. Hist. (6) I. p. 295 (1888).

Id. Mon. Orient. Cicad. p. 47, pl. V. fig. 3, *a*, *b* (1889).

This and the next species form the first group of the Bornean species of this genus, characterized by unspotted tegmina. This species is further separated by having unicolorous opercula.

Habitat: Borneo and Johore.

One example from Sarawak in Sarawak Museum.

2.—*Cosmopsaltria ida*, Moulton.

Joorn. Str. Br. Roy. Asiat. Soc. No. 57, p. 139 (1911).

A very distinct little species; opercula narrowly edged with piceous on inner margin and at apex. Opercula of *jacoona* reach 5th abdominal segment, while in *ida* they reach the last segment. In both species the rostrum barely reaches the posterior coxæ.

Habitat: Kedurong, Sarawak.

Two specimens from Kedurong in Sarawak Museum, including Type. A third in the collection of Mr. Distant from the same locality (e Sar. Mus.).

3.—*Cosmopsaltria inermis*, Stal.

Ofv. Vet.-Ak. Förh. p. 703 (1870).

Distant, Mon. Orient. Cicad. p. 49, pl. VI. fig. 15, *a*, *b* (1890).

This and the next species (*latilinea*) are characterized by the tegmina being infuscated on veins at base of 2nd, 3rd, 5th, and 7th apical areas, besides a hind-marginal row of spots on the transverse veins separating the apical areas. Apart from this feature *inermis* is quite distinct, having opercula rounded at apices, while pronotal and mesonotal markings are quite different from those of *latilinea*.

Habitat: Yokohama, Philippines, Palawan and Borneo.

Two specimens in the Sarawak Museum, from Trusan and Baram.

4.—*Cosmopsaltria latilinea*, Walker.

Journ. Linn. Soc. Zool. X. p. 85 (1867).

Cosmopsaltria padda, Distant, Ann. Mag. Nat. Hist. (5) XX. p. 229 (1887).

Cosmopsaltria latilinea, Distant, Mon. Orient. Cicad. p. 48 pl. IV. fig. 15, *a*, *b* (1889).

[*C. duarum* var. *latilinea*, Distant, Syn. Catal. Hom. p. 55 (1906)].

Cosmopsaltria latilinea, Moulton, Journ. Str. Br., Roy. Asiat. Soc. No. 57, p. 138 (1911).

This species, *C. duarum* and *C. agatha* form a little group, distinguished by the type of the mesonotal markings being common to all three. Besides the infuscations of the tegmina already noted, *latilinea* may be distinguished among other characters from the other two species, by the colours of the opercula, which are green at base, brown in centre and piceous at apex and inner margin. The rostrum reaches the centre of the posterior coxae.

Habitat: Borneo and Penang.

Sarawak: Baram Point, Kedurong, Bintulu and Kuching—many specimens (Sar. Mus.).

5.—*Cosmopsaltria phæophila*, Walker,

List Hom. i. p. 52 (1850).

Distant Mon. Orient. Cicad. p. 68, pl. XII. fig. 21, *a*, *b* (1890)

I have not seen this species, but from Walker's description, it seems to be very like *C. duarum*, though Distant's figure of the female shows a somewhat different insect.

Habitat: Borneo and Corea.

Cosmopsaltria duarum, Walker.

Dundubia duarum, Walk. Journ. Linn. Soc. Zool. i. p. 141 (1857).

Cosmopsaltria lauta, Dist. Ann. Mag. Nat. Hist. (6) i. p. 293 (1881).

id. Mon. Orient. Cicad. p. 48, pl. V. fig. 8 (1889).

This species has very broad piceous margins to the opercula. The rostrum reaches just beyond the posterior coxae. *C. duarum*, *agatha*, *montivaga* and *phæophila* (according to Walker's description, but not to

Distant's figure) form a little group characterized by the transverse veins at base of second and third apical areas only of the tegmina being infuscated.

Habitat: Borneo.

There are four examples of this form in the Sarawak Museum from Sadong and Kuching; but there are specimens of another form which differ in one characteristic only and I therefore regard them as a variety of this species and describe as under:—

6 a.—*Cosmopsaltria duarum*, Wlk. var. *vera*, nov.

Male. Differs from typical form *only in the position of lateral fascia on pronotum. This forms a straight dark line from base of eye, along lateral margin to junction of tegmen. This is an invariable feature in the seven examples before me, and is the only difference I can detect between it and the typical form, but it is sufficient to distinguish the two easily.

Female. Unknown.

Type male, from Kedurong Light house, 1910 (Sar. Mus.).

Habitat. Sarawak: Baram Point and Kedurong Point.

Two of the seven examples of this variety, vary in the extent of the piceous margin to the opercula, which is slightly more reduced than in the other five, or than in the typical form.

7.—*Cosmopsaltria agatha*, sp. n.

Male. Head, pronotum and mesonotum, ochreous-olive; face anteriorly and transversely striated with black, a large black spot on face at base of rostrum. Black central fascia on front, continued across vertex enclosing ocelli; inner margin of vertex to the eyes black, and a curved black line from inner margin towards base of eye. Pronotum with two narrow black central longitudinal fasciæ united posteriorly; exteriorly an irregular black spot joining these fasciæ anteriorly;

*The typical form is well figured by Distant in his "Monograph of Oriental Cicadidae" under the name of "*C. lauta (latilinea, var?)*", and he describes the characteristic marking on the pronotum thus:— "pronotum with a central double fascia united at base. *a large sublateral spot on each side, and a spot beneath on basal margin." His figure shows well how these last two markings, together with the sublateral fascia of the mesonotum, form one continuous sublateral fascia. (*The italics are mine).

a broad oblique black fascia from base of eye to posterior margin of pronotum. Five longitudinal black stripes on mesonotum; the central long and thin, but slightly widened from centre posteriorly, the two stripes on each side of this, short and thicker, succeeded posteriorly by two rounded black spots just above the cruciform elevation, the two outer stripes heavy and slightly sinuate, *viz.*, anteriorly, inwardly concave and posteriorly, outwardly concave. Black spot on cruciform elevation, succeeded by two elongate black spots on first and second abdominal segments. Abdomen above dark castaneous and greyishly pilose, tympanal coverings olivaceous. Body beneath and legs ochreous, apex of abdomen black. Femora of front legs spined and piceous at apex, tarsi of front and middle legs, basal and apical portions of tibiæ of front, middle and hind legs piceous. Tegmina hyaline, apical areas very slightly duskily suffused; costal membrane and venation brown; cross veins at base of second and third apical areas infuscated with brown. Wings hyaline. Rostrum reaches centre of posterior coxæ; its apex black. Opercula reach last abdominal segment, broad, meeting in centre, concavely sinuate on outer margins near base, obtusely rounded at apices; ground-colour ochraceous, with dark castaneous median bar, inner margin and apex (broadly) piceous.

Length, excl. tegm. 35 mm.; exp. tegm. 115 mm.

Type. Male. Kedurong, Sarawak (Sar. Mus.).

Habitat. Baram Point and Kedurong, Sarawak.

Female unknown.

Allied to *C. duarum*, Walker, and *C. montivaga*, Distant. It can be distinguished from *montivaga* by the ochreous ground-colour of its opercula which is green in *montivaga*, by the ochreous-olive ground colour of mesonotum, which is red castaneous in *montivaga*; and the opercula of *agatha* meet along the centre of abdomen, whereas they are distinctly apart in *montivaga*. The bar across the opercula in *agatha* at once distinguishes it from *duarum*.

8.—*Cosmopsaltria montivaga*, Distant.

Ann. Mag. Nat. Hist. (6) III. p. 421 (1889).

Id. Mon. Orient. Cicad. p. 49, pl. XII. fig. 12, *a, b* (1890).

Tegmina infuscated at base of 2nd and 3rd apical

areas only. Rostrum barely reaches posterior coxæ. Opercula narrowly margined with piceous on inner margin, broadly at apex. Distinguished from preceding species by green ground-colour of opercula, whose inner margins do *not* meet. The mesonotal markings are also different. Ground-colour of mesonotum is red brown and the black fasciæ are more slender by half. The ground colour of pronotum is light olivaceous brown like the ground-colour of both pronotum and mesonotum in *C. agatha*.

Habitat: Borneo. Mt. Kina Balu (Whitehead); Sarawak: Baram Point, Kedurong and Kuching—several specimens (Sar. Mus.).

9.—*Cosmopsaltria alticola*, Distant.

Trans. Ent. Soc. Lond. p. 200 (1905).

I have not seen this species, but Distant notes that it is allied to *C. montivaga*. The following two points mentioned in his description serve to separate it from all the other Bornean species:—(i) opercula reach the fifth segment of abdomen only (*C. jacoona*, Dist. is the only other Bornean *Cosmopsaltria* thus characterized), (ii) tegmina infuscated on veins at base of 2nd, 3rd and 5th apical areas—a unique feature among the above species.

Habitat: Borneo.

The following synopsis—artificial as all such keys must be—shows more clearly how the above species may be differentiated, besides suggesting their relations to one another.

KEY TO THE BORNEAN SPECIES OF *Cosmopsaltria*, STAL.

A.—Tegmina unspotted.

- a. Opercula reaching 5th abdominal segment and unicolorous 1. *jacoona*.
- aa. Opercula reaching last abdominal segment and very narrowly margined with piceous. 2. *ida*.

B.—Tegmina spotted.

- a. Opercula reaching to last abdominal segment.
- b. Veins at base of 2nd, 3rd, 5th and 7th apical areas infus-

cated ; hind-marginal row of spots on veins dividing apical areas.

- c. Apices of opercula rounded and bicolorous (?)¹ ... 3. *inermis*.
- cc. Apices of opercula rounded inwardly, obtuse outwardly, and tricolorous. ... 4. *latilinea*.
- bb. Veins at base of 2nd and 3rd apical areas only, infuscated ; no hind-marginal row of spots in tegmina.
- d. Opercula with very broad piceous margins ; no transverse band.
- e. Rostrum reaching the posterior coxae². ... 5. *phæophila*.
- ee. Rostrum just passing the posterior coxae.
- f. Lateral fasciæ across pronotum. ... 6. *duarum*.
- ff. Lateral fasciæ along margin of pronotum. ... 6 a. var. *vera*.
- dd. Opercula with piceous margins ; and median transverse band.
- g. Opercula meet on abdomen ; ground-colour biscuit colour. 7. *agatha*.
- gg. Opercula do not meet ; ground-colour green. ... 8. *montivaga*.
- aa. Opercula reaching 5th segment only ; narrowly margined with piceous. Tegmina infuscated on veins at base of 2nd, 3rd and 5th apical areas. ... 9. *alticola*.

1.—Having only seen the female of this species I judge from Distant's description and figure of the male for this last character.

2.—Walker describes the mouth as "tawny with a black tip, reaching the hind hips."